SB628719

INFINITI. SERVICE BULLETIN

Classification:	Reference:	Date:
FA01-001	ITB01-034	June 1, 2001

2002 Q45; STEERING/BODY VIBRATION AT HIGHWAY SPEED

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APPLIED VEHICLE(S): 2002 Q45 (F50)

SERVICE INFORMATION

If a customer complains about steering and/or body vibration while driving (without braking) at speeds between 60 and 70 MPH, the cause(s) may be:

- Road input (road surface imperfections)
- Out-of-balance front or rear tires/wheels
- Insufficient steering rack sliding force adjustment
- Tire flat spotting
- Excessive tire Radial Force Variations (RFV)

Use the following service procedure to identify and resolve this incident, if it should occur.

SERVICE PROCEDURE

If an applied vehicle exhibits steering and/or body vibration, use the repair flow chart on page 3 to determine the cause of the steering and/or body vibration and apply the correct repair procedure(s) provided in this bulletin.

NOTES:

Road Input (Road Surface Imperfections):

This bulletin does not apply to vibration complaints due to waves, cracks, expansion joints, and other imperfections that may exist on the surface of the road.

To confirm if the vibration incident is due to road input, road test a known good vehicle with the same size tires on the same road and compare vibration levels to the incident vehicle.

Low Profile Tires:

The 2002 Q45 (F50) is equipped with low profile tires: 17" rim with 55 aspect ratio or 18" rim with 45 aspect ratio. In recent years customers have demanded low profile tires because of their appealing style and better handling performance. However, low profile tires/wheels could cause greater level of vibration and road noise because low profile tires/wheels are less capable of absorbing vibration and road noise than high profile tires.

Vehicle Storage Affect On Tire Flat Spotting:

If the vehicle exhibits vibrations in the steering/floor/seat at highway speeds on smooth road, the cause may be tire flat spotting due to storage. See **Tire Flat Spotting Information** on pages 4-5 for more detail.

Vehicles are shipped from the factory with tire pressure higher than the recommended pressure to help avoid flat-spotting during storage.

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To minimize the possibility of flat spots occurring on new vehicles, take the following steps upon receipt of newly shipped vehicles:

1. Do not reduce tire pressure until the vehicle is in the final stages of being readied for customer delivery.
2. It is recommended to move each vehicle at least every two weeks. Ensure that the vehicle will rest on a different tire spot whenever it is moved.

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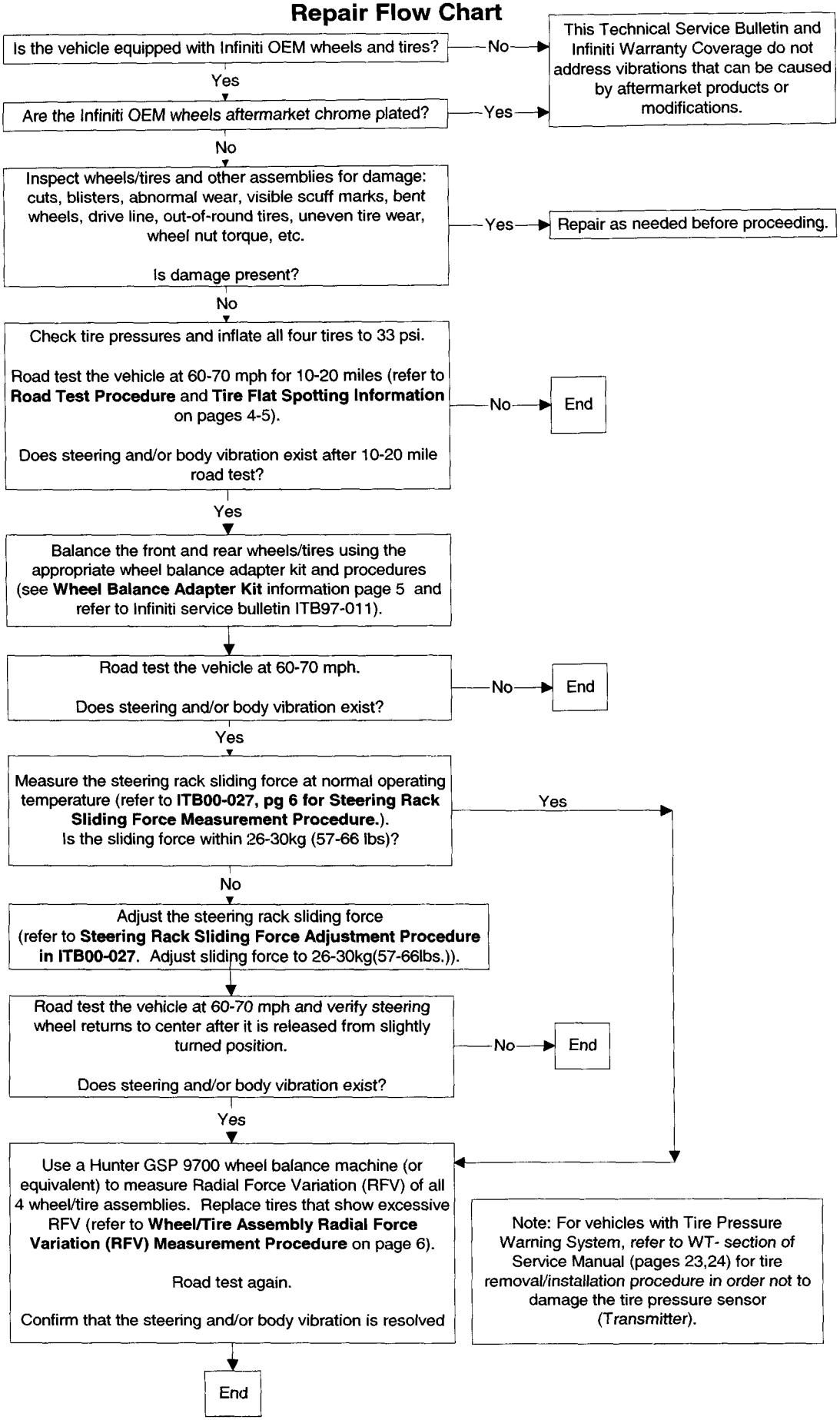
Repair Flow Chart



Inspect Wheels And Tires:

1. Inspect wheels and determine if the vehicle is equipped with Infiniti OEM wheels and tires:
   - If the vehicle **is not** equipped with Infiniti OEM wheels and tires, this bulletin and Infiniti Warranty Coverage do not address vibrations that can be caused by aftermarket products or modifications.
   - If the vehicle **is** equipped with Infiniti OEM wheels and tires, proceed to step 2 below.
2. Determine if the Infiniti OEM wheels are aftermarket chrome plated:
   - If the Infiniti OEM wheels **are** aftermarket chrome plated, this bulletin and Infiniti Warranty Coverage do not address vibrations that can be caused by aftermarket products or modifications.
   - If the Infiniti OEM wheels **are not** aftermarket chrome plated, proceed to step 3 below.
3. Inspect the wheels/tire assemblies for damage (i.e. cuts, blisters, abnormal wear, visible scuff marks, bent wheels, drive line, out-of-round tires, uneven tire wear, wheel nut torque, etc). Determine if damage is present:
   - If damage **is** present, repair as needed before proceeding.
   - If damage **is not** present, proceed to the **Road Test Procedure** below.
4. Check tire pressure and inflate all four tires to 33 psi.

Road Test Procedure

1. Road test the vehicle under the following conditions:

   On a smooth road between speeds of 60 and 70 MPH for 10 to 20 miles. Occasionally make turns to check for low-level vibration in the steering and/or body.

   NOTE: You **must** perform the tests under the above noted conditions to "exercise" the tires and eliminate "cold" flat spotting that occurs due to short-period vehicle storage or parking (see Short-Period/Cold Flat Spotting below for detail).

   Performing the road tests as specified will also allow you to get an accurate **Wheel/Tire Assembly Radial Force Variation (RFV) Measurement** (see page 6 of this bulletin for detail).

Tire Flat Spotting Information:

If vibration occurs in a vehicle's steering/floor/seat at highway speeds, the cause may be tire flat spotting. Two types of tire flat spotting may occur; long-period/storage flat spotting and short-period/cold flat spotting. The following are descriptions of both types:

Short-Period/Cold Flat Spotting:

Short-period/cold flat spotting may occur when a vehicle is parked or stored for short periods of time (i.e. overnight parking or airport parking, etc., for up to 3 weeks).

Tires usually recover from "cold" flat spots. Depending on the storage/parking period, tires may require up to 20 miles of driving to recover from a "cold" flat spot. Tires recover faster when the vehicle is driven at highway speeds (60-70 mph).

Long-Period/Storage Flat Spotting:

Long-period/storage flat spotting may occur when a vehicle is parked or stored in one location for a long period of time (more than one month).

It can be eliminated by:

- Increasing tire pressure to 44 psi and lifting all the tires off the ground for a few days.
- Driving 100+ miles at highway speeds (60-70 mph).

2. After the road test is complete, determine if the steering and/or body vibration still exists:

   A. If the vibration no longer exists, the procedure is complete.
   B. If the vibration still exists, balance the front and rear wheels/tires using the appropriate wheel balance adapter kit and procedures (see **Wheel Balance Adapter Kit** information below).

Wheel Balance Adapter Kit

1. Install the wheel balance adapter kit (Kent-Moore tool #J42625-280) on the wheel and wheel balance machine in the order shown below.
2. Refer to Infiniti Service Bulletin "Wheel Balance Machine Adapter Kits" (ITB97-011) for further information.

NOTE: The 2002 Q45(F50) tires/wheel assemblies are equipped with pressure sensors that weights approximately 30g. More wheel weights may be needed to balance the tires/wheel assemblies.

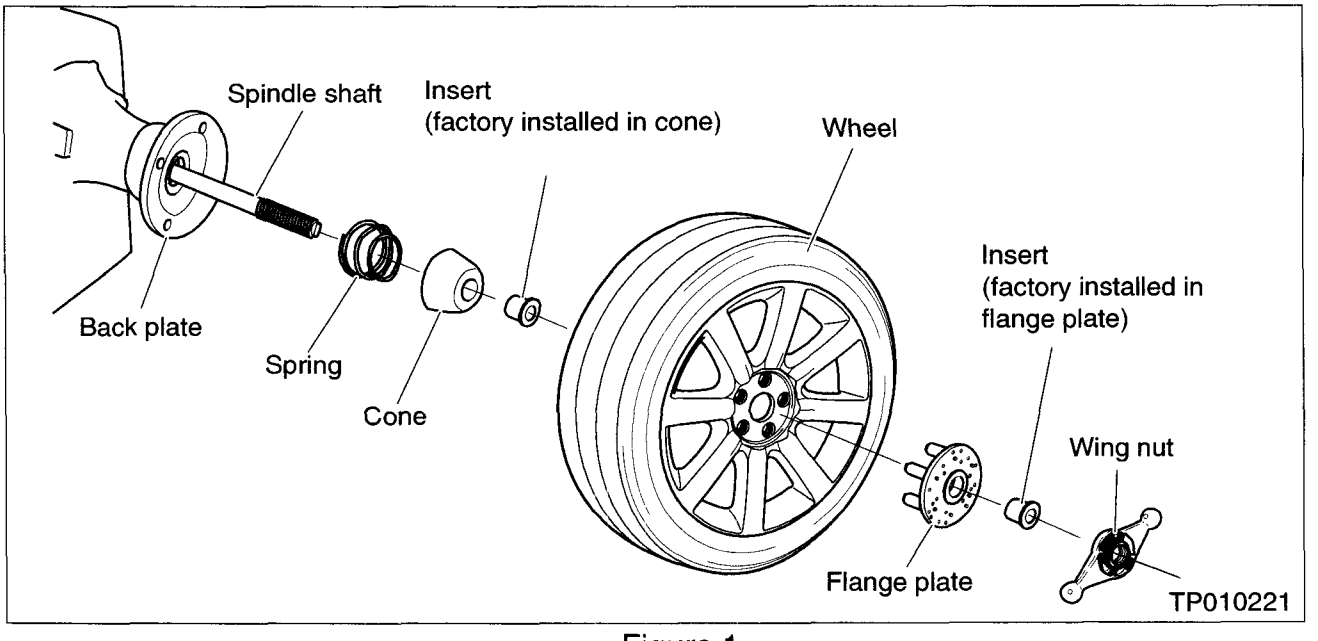


Figure 1

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Wheel/Tire Assembly Radial Force Variation (RFV) Measurement Procedure:

Use a Hunter GSP 9700 wheel balance machine (or comparable equipment) to perform this procedure and identify tire/wheel assemblies with excessive RFV.

If you do not have a Hunter GSP 9700 balance machine (or comparable equipment), locate a repair facility equipped with one in your area by logging on to www.hunter.com or calling 1-314-731-3020. Hunter will connect you with a service representative who can assist you.

1. Check the inflation pressure of all four tires and adjust to 33 PSI, if needed.
2. Repeat the **Road Test Procedure** (page 4).

   NOTE: Completing the **Road Test Procedure** will "exercise" the tires and address any possible "cold" flat spotting that may have occurred due to short-period vehicle storage or parking (see Short-Period/Cold Flat Spotting on page 4 for details). It is also necessary to perform the road test as specified to get an accurate **RFV Measurement**.

> **Never** check RFV without first driving the vehicle as noted and "exercising" the tires. If the vehicle's tires are not exercised first, accuracy of RFV measurements can vary 2 or 3 times the actual values, even if the vehicle is parked/stored in one location for only a short period of time (20 minutes).
>
> Perform the RFV measurement **immediately** after exercising the tires. If the RFV measurement cannot be performed immediately, lift all four wheels off the ground with a hoist or jack and stands to prevent measurement errors due to further flat spotting.

3. Follow the operation instructions of the Hunter GSP 9700 machine (or equivalent) to measure RFV of all four tire/wheel assemblies.

   NOTE: If you are using the Hunter GSP 9700 machine, use the "Details" pop-up screen to obtain Radial 1st Harmonic Value (RH1).

4. Identify tires/wheel assemblies with excessive RH1 value using the following information:

AXLE	TOTAL RH1
Front * (RF & LF)	27 lbs. (12 kg.)
Rear * (RR & LR)	27 lbs. (12 kg.)

* Note: RH1 value for each tire/wheel assembly not to exceed 16 lbs (7kg).

Examples of Excessive Front Axle Values:

LF RH1 = 20 lbs. (9 kg.) ---------- **Excessive RH1; Replace Left Front Tire**
RF RH1 = 11 lbs. (5 kg.)

Total Front Axle RH1 = 31 lbs. (14 kg.) **Over Total Limit of 27 lbs. (12 kg.)**

5. Relocate the incident tires/wheel assemblies to ensure they are placed correctly to meet RH1 requirements as listed above in the table (step 4).

   If RH1 requirements cannot be met through relocation of tire/wheel assembly, replace incident tires with appropriate tires listed in the PARTS INFORMATION section on page 7 to achieve total RH1 numbers for the front axle as specified above in the table (step 4).

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NOTES: Lubricate the tire bead and mating surfaces of the wheels when mounting. Use an appropriate fast drying tire mounting lubricant to prevent liquid from being trapped inside the tire.

Match and position the red dot on the tire sidewall in line with the blue/gray/white dot on the wheel. If the paint dots are wiped off or missing, use the Hunter GSP 9700 machine tire/wheel match mounting feature to achieve the best RFV fit.

Immediately inflate the tires to 50 PSI. Gradually deflate the tires to proper air pressure of 33 PSI. This will aid in properly mating the tire beads with the rims.

6. Road test the vehicle at 60-70 mph.
7. Confirm that the steering and/or body vibration is resolved.

PARTS INFORMATION

DESCRIPTION	PART #	QUANTITY
Michellin Tire – Tbls. (P225/55 R17 95V)	40312-AR265	1 to 4
Michellin Tire – Tbls. (P245/45 R18 96V)	40312-AR275	1 to 4
Bridgetone Tire – Tbls. (P225/55 R17)	40312-AR260	1 to 4

CLAIMS INFORMATION

Submit a Primary Operation (PO) line claim(1) using the following claims coding:

DESCRIPTION	OP CODE	SYM	DIA	FRT
Perform road test/flat spot procedure	WX02AA	EA or ZN	(2)	0.5 hrs
Balance one wheel	WD52AA			0.4 hrs
Combination: Balance each Add'l wheel – use up to 3 times on claim	WD521A			0.1 hrs
Steering rack sliding force adjust	WD39AA			0.7 hrs
Measure radial force variation (RFV) on all 4 wheels	WX03AA			0.4 hrs
Index/recheck/remount each wheel, as req'd per RFV – may be used up to 4 times on claim	WX04AA			0.3 hrs

1. Use up to 5 Op Codes per line – use second PO line claim if required.
2. As indicated by technician's repair(s).